

3a. AWARDING OFFICE:

| OFFICE OF  |                            | MODIF   |                      |  | 875 N.                                       | of Naval R<br>Randolph S<br>ton, VA 222  | Street, Sui                             | te 1425     |
|--|----------------------------|---|----------------------|--|--|--|---|-------------|
| Th Th  |                            | 1. INSTRUMENT TYPE:<br>Grant Award                          |                      |  | 3b. CFDA:<br>12.300                          |  |   |             |
| AVAL RESEAR  |                            | 2. AUTHORITY:   | 21                   | 204  | 3c. DUNS NUI                                 |  |   |             |
| 4. AWARD NO.:  |                            | 10 USC 2358 and 3   |                      | DIFICATION TYPE:   | 002257:<br>7. PR NO.:                        | 350  |   |             |
| N00014-16-1-2732   |                            | A00003  | ADI                  |  | 472000                                       |  |   |             |
| 8. ACTIVITY/AGENCY PROPOSAL<br>GRANT12058201   | . NO.:                     | 9. RECIPIENT PROPOSA  | AL NO.:              | 10. PROPOSAL DA<br>12182015                                | TE:  | 11. ACTIVITY T<br>R&D  | YPE: 12. PRO                            | OGRAM TYPE: |
| 13. ISSUED TO<br>13a. ADDRESS: 13b. CAGE:<br>03587                                   |                            | DI/EFT NUMBER:<br>N/A                                       |                      | TTANCE ADDRESS<br>e as Block # 1                           |  | FROM BLOCK   | 13):                                    |             |
| SYRACUSE UNIVERSITY SU 900 S CROUSE AVE STE SYRACUSE NY 13244-0 UNITED STATES OF AME | 001                        |   |                      |  |  |  |   |             |
| 13d. BUSINESS OFFICE CONTAC<br>Mary Ellen Gilbert                                    | T:                         |   |                      |  |  |  |   |             |
| 13e. TELEPHONE NUMBER: 315-443-1121  | f. EMAIL ADI<br>magilber@: |   |                      |  |  |  |   |             |
| 15. RESEARCH TITLE AND/OR DE<br>The Topology of Force                                |                            |   |                      |  |  |  |   |             |
| 16. FUNDING  | ACTIVITY//                 | AGENCY SHARE REC  | IPIENT SH            | HARE TOTAL   | -  | 17. CURRENT F  | UNDING PERI                             | OD          |
| PREVIOUSLY OBLIGATED:  |                            |   |                      | \$710,   | 740.00                                       | N/A  | THROUGH                                 | N/A         |
| OBLIGATED BY THIS ACTION:  |                            |   |                      | \$0.00   |  |  |   |             |
| TOTAL OBLIGATED ON AWARD:  |                            |   |                      | \$710,   | 740.00                                       | 18. PERIOD OF  | PERFORMANO                              | CF.         |
| FUTURE FUNDING:  |                            |   |                      | \$0.00   |  |  |   | 12/31/2019  |
| GRANT TOTAL:   |                            |   |                      | \$710,   | 740.00                                       | 07/01/2016   | , ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | 12/31/2019  |
| 19. ACCOUNTING AND APPROPR<br>See Attached Financi                                   |                            |   |                      |  |  |  |   |             |
| 20a. PRINCIPAL INVESTIGATOR/F<br>TECHNICAL REPRESENTATIVE:                           | RECIPIENT                  |   | 21. TECH<br>21a. NAM | INICAL REPRESENTA<br>IE: BRIAN HOLM                        |  |  | 21b. CODE:<br>351                       |             |
| Melissa Green  |                            |   | 875                  | RESS:<br>OSPACE SCIENCE<br>N. Randolph S<br>ington VA 2220 | treet  | DIV  |   |             |
|  | c. EMAIL ADI<br>greenma@sy |   | 21d. TELI            | EPHONE NUMBER:   |  | 21e. EMAIL AL<br>BRIAN. HOLM   | DDRESS:<br>1-HANSEN@NAV                 | Y.MIL       |
| 22. POC FOR THIS ACTION<br>22a. NAME: MICHELE M MAR                                  | SHALL                      | 22b. CODE:<br>BD244   | ONR                  | INISTRATIVE OFFIC<br>REG Office Bo                         | ston   | •  | 23b. CODE:<br>N6287                     | 19          |
| 22c. ADDRESS: Office of Naval Rese<br>495 Summer Street Ro<br>Boston MA 02210-2109   |                            |   | Ema<br>495           | ephone: (617) il:ONR_Boston@ Summer Street TON MA 02210-2  | mavy.mil<br>, Room 627                       |  |   |             |
| 22d. TELEPHONE NUMBER: 22d   | e. EMAIL ADI               | DRESS:  |                      |  |  |  |   |             |
| 24. SUBMIT PAYMENT REQUEST   | TO: 2                      | 25a. PAYING OFFICE  | 25b. COD             | DE: нQ0337   | 26a. PATENT                                  | OFFICE:  | 26b. CODE:                              | N00014      |
| Same as block 23a  |                            | DFAS-CO/NORTH ENTITH HQ0337 PO Box 182266 COLUMBUS OH 43128 | LEMENT               | OPERATIONS   | ATTN: ON<br>Intellec<br>One Libe<br>875 Nort | f Naval Res<br>R Office of<br>tual Proper<br>rty Center<br>h Randolph<br>n, VA 22203 | E Counsel<br>cty Section<br>Street, Su  |             |

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| AWARD NO.   | A14/ADD/#40DI                             | FIGATION                | MODIFICATION NO.   |                                    |
|---|---|-------------------------|--|------------------------------------|
| N00014-16-1-2732  | AWARD/MODI                                | FICATION                | A00003   |                                    |
| 27. SPECIAL INSTRUCTIONS:   |   |                         |  |                                    |
| See Special Requirements on P   | age 5                                     |                         |  |                                    |
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|   |   |                         |  |                                    |
| 28. DELEGATIONS: The administration duties li<br>make their full text available. Please direct ques |   |                         | (block 23a). Upon request the aw<br>Contracts-Grants/Regiona |                                    |
|   |   |                         |  |                                    |
| This award provides full dele includes the functions descri   |   |                         |  |                                    |
| functions related to payments   |   |                         | the administrative gr  | tailes officer                     |
|   |   |                         |  |                                    |
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|   |   |                         |  |                                    |
| 29. TERMS AND CONDITIONS: The following to request the awarding office contact named in blooms.     |   |                         |  | they were given in full text. Upon |
| request the awarding office contact framed in bio   | CK 22 WIII Make their full text available | e, or they can be lound | at the specified OIL.  |                                    |
| DOCUMENT  |   | URL                     |  |                                    |
|   |   |                         |  |                                    |
| The following documents may b http://www.onr.navy.mil/Contr.  |   | sal/grants-propo        | osal/grants-terms-cond                                       | ditions aspx                       |
| DOD RESEARCH AND DEVELOPMENT  |   |                         | JEAT, GLAITED COLLEGE COLL                                   | X1010110.00P11                     |
| UAWA AWARD A (NOV 2003) STANDARD TERMS/CONDITIONS FOR   | RESEARCH GRANTS (AGENCY                   | SPECIFIC) (FE           | B 2015)  |                                    |
|   | TEDETITION CHARTE (TODAY)                 | 01201120) (121          | 2010,  |                                    |
|   |   |                         |  |                                    |
|   |   |                         |  |                                    |
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|   |   |                         |  |                                    |
| 30. OPTIONS OPTION NO.  | AMOUNT                                    | ı                       | PERIOD   |                                    |
| (1)   |   |                         |  |                                    |
| (2)<br>(3)  |   |                         |  |                                    |
| (4)   |   |                         |  |                                    |
|   |   |                         |  |                                    |
| 31. REPORTS: The reporting requirements unde<br>Conditions and in any additional language for Pa    |   |                         |  | orting) to the General Terms and   |
|   |   |                         |  |                                    |
|   |   |                         |  |                                    |
|   |   |                         |  |                                    |
|   |   |                         |  |                                    |
| 32. FOR THE RECIPIENT   |   | 33. FOR THE UNITED      | D STATES OF AMERICA  |                                    |
|   |   |                         |  |                                    |
|   |   |                         |  |                                    |
| 32a. SIGNATURE OF PERSON AUTHORIZED   | TO SIGN                                   | 33a. SIGNATURE OF       | AWARDING OFFICER   |                                    |
|   |   |                         | ned by MICHELE MARSHA  | LL 1397785846                      |
|   |   | Dated: 2019.0           | 04.01 09:33:50 EST   |                                    |
| 32b. NAME AND TITLE OF SIGNER   | 32c. DATE SIGNED                          | 33b. NAME AND TITE      | LE OF AWARD OFFICER  | 33c. DATE SIGNED                   |
|   |   | MICHELE MARSH           | IALL   | 04/01/2019                         |

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## FINANCIAL ACCOUNTING DATA SHEET - NAVY

| 1. CONTRAC  | CT NUMBER (C | CRITICAL)           | 2. SPIIN (CR  | ITICAL)   |            | 3. MOE          | (CRIT    | ICAL)                |          | 4. PR NU  | JMBER  |         |        |                      |  |                      |
|---|--------------|---------------------|---------------|-----------|------------|-----------------|----------|----------------------|----------|-----------|--------|---------|--------|----------------------|--|----------------------|
| N00014-   | 16-1-2732    |                     |               |           |            | A00             | 003      |                      |          | 4720      | 002136 |         |        |                      |  |                      |
| CLIN/SLIN   | 6. LINE OF A | CCOUNTING           |               |           |            |                 |          |                      |          |           |        |         |        | 7.                   |  | NAVY                 |
|   | A.<br>ACRN   | B.<br>APPROPRIATION | C.<br>SUBHEAD | D.<br>OBJ | E.<br>PARM | F.<br>RFM       | G.<br>SA | H.<br>AAA            | I.<br>IT | J.<br>PAA | K.     | COST CC | DE     | AMOUNT<br>(CRITICAL) |  | INTERNAL USE<br>ONLY |
| :   | (CRITICAL)   | (CRITICAL)          | (CRITICAL)    | CLA       | . ,        |                 |          | (CRITICAL)           |          | ''''      | PROJ   |         | PDLI & | (Ortificate)         |  | REF DOC/ACRN         |
|   |              |                     |               |           |            |                 |          |                      |          |           | UNIT   | MCC     | SUF    |                      |  |                      |
|   |              |                     |               |           |            |                 |          |                      |          |           |        |         |        |                      |  |                      |
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|   |              |                     |               |           |            |                 |          |                      |          |           |        |         |        |                      |  |                      |
| PAGE TOTAL  |              |                     |               |           |            |                 |          |                      |          |           |        |         |        |                      |  |                      |
| GRAND TOTAL PREPARED/AUTHORIZED BY: COMPTROLLER APPROVAL: |              |                     |               |           |            | ND TOTAL        | \$0.00   |                      |          |           |        |         |        |                      |  |                      |
| FILEARED  | AUTHORIZED   | J                   |               |           |            |                 | FOR F    | ISCAL DATA           | AND SI   | GNATURE   |        |         |        | for COMPTROLLER      |  | ND CONTRACT DEVIEWED |
| DATE:  BY DATE:   |              |                     |               |           |            | for COMPTROLLER | κ, υ     | NR CONTRACT REVIEWED |          |           |        |         |        |                      |  |                      |

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## FINANCIAL ACCOUNTING DATA SHEET - NON-NAVY DoD ACTIVITIES

|                  | CT NUMBER (              |        | 2. SPIIN (CRITICAL) | 3. MOD (CRITICAL)              | 4. PR NUMBER |                            |   |
|------------------|--------------------------|--------|---------------------|--------------------------------|--------------|----------------------------|---|
| N00014-16-1-2732 |                          | A00003 | 4720002136          |                                |              |                            |   |
| 5.<br>CLIN/SLIN  | 6.<br>ACRN<br>(CRITICAL) | 7.     | A                   | CCOUNTING CITATION             |              | 8.<br>AMOUNT<br>(CRITICAL) | NAVY INTERNAL<br>USE ONLY<br>REF DOC/ACRN |
|                  |                          |        |                     |                                |              |                            |   |
|                  |                          |        |                     |                                | PAGE TOTAL   |                            |   |
| DREDARED/        | AUTHORIZED               | NRV-   |                     | COMPTROLLER APPROVAL:          | GRAND TOTAL  |                            |   |
| DATE:            | AOTHORIZED               | , 61.  |                     | FOR FISCAL DATA AND S BY DATE: | SIGNATURE    | for COMPTROLLER, ONR CO    | ONTRACT REVIEWED                          |

| ARD NO.<br>00014-16-1-2732  | SPECIAL REQUIREMENTS   | MODIFICATION NO.<br>A00003 |  |
|-----------------------------|--|----------------------------|--|
| Period of Performance at no | ation is to provide an extension to the o additional cost to the government. The n |                            |  |
| end date is 12/31/2019. All | l other terms and conditions remain the sa   | me.                        |  |
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